



Alternative and Renewable Fuel and Vehicle Technology Program

Advisory Committee Meeting

December 4, 2012

California Energy Commission
Hearing Room A



Meeting Agenda

10:00 Introductions and Opening Remarks

10:15 Program Status Update

10:45 2013-2014 Investment Plan Update

11:15 Advisory Committee Discussion

12:00 Lunch

1:00 Advisory Committee Discussion, cont.

2:00 Public Comment



Program Status Update

Jim McKinney
Program Manager



Program Status Update

- Now in 5th year of 7.5-year duration
- To date, Energy Commission has allocated more than \$450 million to funding categories, and awarded more than \$300 million among 150 projects
- Current emphases:
 - Overseeing invoices from previous awards
 - Developing agreements based on recent solicitations
 - Developing next set of solicitations



Summary of Major Award Types

- Alternative Fuel Production (\$70.5 million)
 - Biomethane production: 9 projects (\$41.3 million)
 - Diesel substitutes production: 9 projects (\$12.4 million)
 - Gasoline substitutes production: 8 projects (\$16.8 million)
- Alternative Fuel Infrastructure (\$66.8 million)
 - E85: 205 stations (\$15.1 million)
 - Biodiesel infrastructure: 5 sites (\$4.5 million)
 - Electric vehicles: 5,211 charging points (\$20.6 million)
 - Hydrogen: 11 stations (\$18.7 million)
 - Natural gas: 30 stations (\$7.9 million)



Summary of Major Award Types, cont.

- Alternative Fuel Vehicles (\$77.4 million)
 - Advanced medium- and heavy-duty vehicle technology demonstrations: 22 individual projects (\$39.3 million)
 - Light-duty electric vehicles: 430 vehicles (\$2.6 million)
 - Medium- and heavy-duty electric vehicles: 155 vehicles (\$4 million)
 - Natural gas vehicles: 1,214 vehicles (\$29.9 million)
 - Propane vehicles: 167 vehicles (\$1.5 million)
- Manufacturing (\$39.9 million)
 - Vehicles and components: 15 projects



Summary of Major Award Types, cont.

- Emerging Opportunities (\$6 million)
 - Federal cost sharing: 2 projects
- Workforce Training (\$18.5 million)
 - Interagency agreements: 5,746 trainees (so far)
- Market and Program Support (\$24.9 million)
 - Electric vehicle readiness: 9 communities (\$2.0 million)
 - Fuel standards (\$4 million)
 - Biofuel sustainability studies (\$1.9 million)
 - Other technical assistance (\$17.0 million)



Summary of Major Award Types, cont.

- 3 major technical support contracts executed
- NREL Technical Support
 - Technology and market assessments
 - PEV planning support
 - Benefits Report support
- UC Davis NEXT Steps
 - PEV consumer behavior
 - Biofuels investment strategies and California case studies
 - Natural gas fuel for goods movement sector
- RAND Corporation
 - Comprehensive ARFVTP assessment



ARFVT Progress - UPDATE

(Funded through September 2012)

	Fuel Area	Existing 2009-2010 Baseline Levels	Additions from ARFVT Program Funding	Percent Increase
Alternative Fueling Infrastructure	Electric	1,270 charging stations	5,211 charging stations	310%
	E85	39 fueling stations	205 fueling stations	425%
	Natural Gas	443 fueling stations	30 stations	7%
	Hydrogen	6 public fueling stations <i>(plus 5 more under construction)</i>	11 fueling stations <i>(in development)</i>	100%
Alternative Fuel Vehicles	Electric Cars	13,268	379	3%
	Electric Trucks	1,409	155	11%
	Natural Gas Trucks	13,995	1,214	9%



Recent Events

- PON-10-603
 - Advanced Medium- and Heavy-Duty Vehicle Technologies
 - Most recently revised NOPA released November 1
 - Three additional projects funded (all drayage trucks)
 - All proposals with passing scores are now funded
- PON-12-606
 - Hydrogen fuel Infrastructure
 - Released November 19, with proposals due January 17
 - \$28.6 million available, with up to \$1.5 million per station
 - 25 approved regions are reflective of anticipated early markets
 - Special consideration for renewable hydrogen and co-location with non-road applications



Future Funding Opportunities

Description	\$ Available	Release
Hydrogen Fueling Infrastructure	\$28.6 Million	(Due January 17)
Natural Gas Infrastructure	\$3.9 Million	December
Electric Truck Retrofit Demonstration	~\$2.4 Million	January/February
Charging Infrastructure	\$6.6 Million	January/February
Commercial Scale Biofuels Production	\$9.3 Million	Spring
Regional Planning	\$2.7 Million	Spring
Centers for Alternative Fuels	\$2.7 Million	Spring
Natural Gas and Propane Vehicle Deployment	\$12.6 Million	Ongoing/Spring



Other Important Updates

- Vision for Clean Air
 - Initial draft released in June
 - Joint effort between CARB, SCAQMD, San Joaquin APCD
 - Potential scenario for meeting air quality goals for 2023 and 2032 as well as greenhouse gas emission goal for 2050
- ZEV Action Plan
 - Draft released in September
 - Coordinated by Governor's Office of Planning and Research
 - Targets: 1 million PEVs by 2020, 1.5 million PEVs by 2025
 - Identifies strategies and actions to support these targets



Other Important Updates, cont.

- LCFS Credit Discounting
 - Rulemaking proceeding approved on November 14
 - Commission will review Section 3103 (Title 20), related to funding prohibitions and credit discounting requirements
 - Workshops to begin early 2013
- Biofuels Workshop
 - Anticipated January 2013
 - Collect information for next biofuel production PON



Other Important Updates, cont.

- Natural Gas and ZEV Truck Workshop
 - Date TBD (Winter/Spring 2013)
 - What is the technological and market status of new vehicle technologies?
 - How can the ARFVTP maximize its impact on the medium- and heavy-duty sector?
- Preparation for Benefits Report
 - Still in initial phases
 - Must be included as part of 2013 IEPR in Fall 2013



Questions on Program Status?



Staff Draft 2013-14 Investment Plan

Charles Smith
Project Manager



Role and Purpose

- First draft of Investment Plan Update, covering FY 2013-2014
- Basis for FY 2013-2014 solicitations, agreements and other funding opportunities
- \$100 million funding allocation for a portfolio of fuels, technologies, and supporting elements



Schedule

- Post Staff Draft: November 20
- First Advisory Committee Meeting: December 4
[Comments requested by December 11](#)
- Post and Submit Revised Draft: January 10
- Second Advisory Committee Meeting: February
- Post Lead Commissioner Report: March
- Adoption by Energy Commission: April/May



Foundations for Funding Recommendations

- Analyses from previous Investment Plans
- Results from recent solicitations
- September Advisory Committee meeting
- Input from industry stakeholders
- Other federal, state, and private investments in this sector
- New analysis and strategy documents
 - Vision for Clean Air
 - Governor's ZEV Action Plan



Biofuel Production and Supply

- \$23 million allocation
 - Large market potential, but production is still far from LCFS and other policy targets
 - Broad supplier interest
- Priorities
 - Open to variety of fuel types
 - Utilize existing infrastructure and vehicle stock
 - Waste-based feedstocks; not edible corn feedstocks (AB 523, Valadao)
 - Low lifecycle carbon emissions
- Questions for consideration
 - Mix of focus on commercial production and pre-commercial projects?
 - How to ensure market viability?



PEV Charging Infrastructure

- \$7 million allocation
 - Reflects need for new infrastructure to keep pace with increase PEV sales
- Priorities
 - Avoid duplication with NRG settlement
 - Expand charging opportunities in workplaces, multi-unit dwellings, and fleet applications
 - Resolve other charging infrastructure issues, such as interoperability
 - Identify and develop new opportunities, in coordination with state and federal research programs



Hydrogen Fueling Infrastructure

- \$20 million allocation
 - Reflects need for new stations to keep pace with automakers' FCV deployment schedules
- Priorities
 - Continue development of stations in early adopter locations
 - Support continued operation and maintenance of new stations
 - Support higher station capacity



Natural Gas Infrastructure

- \$1.5 million allocation
 - Focus of natural gas funding is in vehicle deployment and engine demonstration
 - Private market stepping in to develop private CNG/LNG fueling infrastructure
- Priorities
 - Support natural gas infrastructure for entities that may have difficulty obtaining other financing, such as school districts and public transit entities



Infrastructure Not Proposed for Funding

- Propane fueling infrastructure
- E85 fueling infrastructure
- Biodiesel infrastructure
- Continue to track and evaluate these areas



Natural Gas Vehicles

- \$12 million allocation
 - Continuing demand for incentives is visible via buydown program
 - Strong interest in natural gas trucks due to substantial fuel cost savings
- Priorities
 - Expand fleets' interest in natural gas trucks
 - Avoid providing vehicle incentives if/when they are not needed
 - Link natural gas vehicles' expansion with biomethane development
- Questions for consideration
 - Whether/how to adjust incentive levels and type eligibility?
 - Continue buydown program, or develop a new approach?



Light-Duty Plug-in Electric Vehicles

- \$5 million allocation
- Priorities
 - Backup funding for Clean Vehicle Rebate Project in the event of oversubscription
 - Expand consumer interest beyond the “early adopters”
 - Support early market introduction of multiple PEV models



Medium- and Heavy-Duty Demonstration

- \$15 million allocation
 - Technology costs still too high for widespread commercial deployment
 - Vision for Clean Air identifies aggressive 2050 scenarios for hybrid, battery electric and fuel cell technologies in this sector
 - Low and near-zero NOx natural gas engines may play a larger role in freight trucks, and can leverage low natural gas prices
- Priorities
 - Demonstrate vehicle technologies that can contribute to long-term GHG emission reductions, air quality improvements, and petroleum displacement
 - Open to multiple fuels and technologies



Vehicles Not Proposed for Funding

- Propane vehicles
 - Funds remain from previous fiscal years
- Electric trucks
 - Previously, the Energy Commission provided added funding as a supplement to HVIP
 - HVIP now includes its own higher incentive for all-electric trucks
- Continue to track and evaluate these areas



Emerging Opportunities (Federal Cost-Sharing)

- \$3 million allocation
- Priorities
 - Prioritize funding to federal cost-sharing opportunities
 - Leverage federal investments
 - Projects that do not fall into any of the other funding allocations



Manufacturing

- \$10 million allocation
 - Continuing need to translate California's venture capital and patent development into sustained economic growth
- Priorities
 - Support in-state economic development, in conjunction with other program goals
 - Open to assembly of vehicles, manufacture of vehicle components, and manufacture of related components



Workforce Training and Development

- \$2.5 million allocation
- Priorities
 - Continue training programs through Employment Training Panel and Employment Development Department
 - Assess need for additional programs (e.g. workforce analysis, apprenticeship programs, career pathways programs)
 - Identify new opportunities to benefit military veterans
- Questions for consideration
 - How to address needs and opportunities of veterans?



Regional Readiness and Planning

- \$1 million allocation
- Priorities
 - Build on and expand PEV regional readiness grants
 - Support statewide PEV regional readiness
 - Expand regional planning into additional alternative fuels



Market and Program Development

- Centers for Alternative Fuels
 - Funded by \$2.7 million in FY 2012-2013
 - Several projects have expressed interest
 - How to objectively solicit and select proposals?
 - No additional funding proposed at this time
- Sustainability Studies
 - On-going area of interest, but no specific needs for the coming year have been identified
 - If needed, funding for sustainability studies may be pulled from the most relevant allocation (e.g. biofuels, manufacturing)



CALIFORNIA ENERGY COMMISSION

	Project/Activity	Proposed Funding Allocation for FY 2013-2014
Alternative Fuel Production	Biofuel Production and Supply	\$23 Million
Alternative Fuel Infrastructure	Electric Charging Infrastructure	\$7 Million
	Hydrogen Fueling Infrastructure	\$20 Million
	Natural Gas Fueling Infrastructure	\$1.5 Million
Alternative Fuel and Advanced Technology Vehicles	Natural Gas Vehicle Incentives	\$12 Million
	Light-Duty Plug-in Electric Vehicles	\$5 Million
	Medium- and Heavy-Duty Advanced Vehicle Technology Demonstration	\$15 Million
Emerging Opportunities	Emerging Opportunities (Federal Cost Sharing)	\$3 Million
Manufacturing	Manufacturing Facilities, Equipment and Working Capital	\$10 Million
Workforce Training and Development	Workforce Training and Development	\$2.5 Million
Market and Program Development	Regional Alternative Fuel Readiness and Planning	\$1 Million
Total Available		\$100 Million